

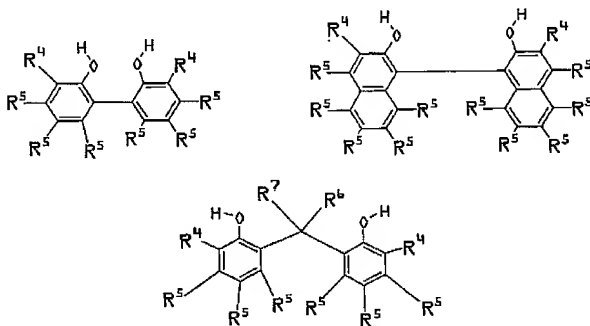
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### Appendix A

#### Status of all claims

1-10. (canceled)

11. (previously presented) A polymeric composition comprising repeat units derived from (1) phosphorus trichloride, (2) an aromatic polyhydric alcohol wherein the location of the OH groups thereof are placed such that, when the polyhydric alcohol is contacted with  $\text{PCl}_3$ , monodentate phosphites are not predominately produced, and (3) an aromatic diol that has a formula selected from the group consisting of



and combinations of two or more thereof;

each  $\text{R}^4$  is independently selected from the group consisting of hydrogen,  $\text{C}_1$  to  $\text{C}_{12}$  alkyl or cycloalkyl group, acetal, ketal,  $-\text{OR}^3$ ,  $-\text{CO}_2\text{R}^3$ ,  $\text{C}_6$  to  $\text{C}_{20}$  aryl group,  $-\text{SiR}^3$ ,  $-\text{NO}_2$ ,  $-\text{SO}_3\text{R}^3$ ,  $-\text{S(O)R}^3$ ,  $-\text{S(O)}_2\text{R}^3$ ,  $-\text{CHO}$ ,  $-\text{C(O)R}^3$ ,  $-\text{F}$ ,  $-\text{Cl}$ ,  $-\text{CN}$ ,  $-\text{CF}_3$ ,  $-\text{C(O)N(R}^3)(\text{R}^3)$ ,  $-\text{A}^1\text{Z}$ , and combinations of two or more thereof;

$\text{Z}$  is selected from the group consisting of  $-\text{CO}_2\text{R}^3$ ,  $-\text{CHO}$ ,  $-\text{C(O)R}^3$ ,  $-\text{C(O)SR}^3$ ,  $-\text{SR}^3$ ,  $-\text{C(O)NR}^1\text{R}^1$ ,  $-\text{OC(O)R}^3$ ,  $-\text{OC(O)OR}^3$ ,  $-\text{N}=\text{CR}^1\text{R}^1$ ,  $-\text{C(R}^1)=\text{NR}^1$ ,  $-\text{C(R}^1)=\text{N-O-R}^1$ ,  $-\text{P(O)(OR}^3)(\text{OR}^3)$ ,  $-\text{S(O)}_2\text{R}^3$ ,  $-\text{S(O)R}^3$ ,

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$-C(O)OC(O)R^3$ ,  $-NR^3CO_2R^3$ ,  $-NR^3C(O)NR^1R^1$ , F, Cl,  $-NO_2$ ,  $-SO_3R^3$ ,  $-CN$ , and combinations of two or more thereof;

each  $R^3$  is independently selected from the group consisting of  $C_1$  to  $C_{12}$  alkyl or cycloalkyl group,  $C_6$  to  $C_{20}$  aryl group, and combinations of two or more thereof;

each  $R^5$  is independently selected from the group consisting of H, F, Cl,  $C_1$  to  $C_{12}$  alkyl,  $C_1$  to  $C_{12}$  cycloalkyl,  $C_6$  to  $C_{20}$  aryl,  $-OR^3$ ,  $-CO_2R^3$ ,  $-C(O)R^3$ ,  $-CHO$ ,  $-CN$ ,  $-CF_3$ , and combinations of two or more thereof;

each  $R^6$  independently is selected from the group consisting of H,  $C_1$  to  $C_{12}$  alkyl,  $C_1$  to  $C_{12}$  cycloalkyl,  $C_6$  to  $C_{20}$  aryl, and combinations of two or more thereof; and

each  $R^7$  independently is selected from the group consisting of H,  $C_1$  to  $C_{12}$  alkyl,  $C_1$  to  $C_{12}$  cycloalkyl,  $C_6$  to  $C_{20}$  aryl, and combinations of two or more thereof..

12. (original) A composition according to Claim 11 wherein said polyhydric alcohol is selected from the group consisting of dialcohols, trialcohols, tetraalcohols, and combinations of two or more thereof.

13. (original) A composition according to Claim 12 wherein said polyhydric alcohol is selected from the group consisting of  $(R^4)(HO)_m-Ar^2-A^1-Ar^2-(OH)_m(R^4)$ ,  $(R^4)(HO)_m-Ar^2-(O-A^1)_p-O-Ar^2-(OH)_m(R^4)$ ,  $(R^4)(OH)_m-Ar^2-Ar^2-(OH)_m(R^4)$ ,  $(R^4)(OH)_m-Ar^2-A^2-Ar^2-(OH)_m(R^4)$ ,  $(R^4)(HO)_m-Ar^2-A^1-C(O)-O-A^1-O-C(O)-A^1-Ar^2-(OH)_m(R^4)$ ,  $(R^4)(OH)_m-Ar^1-(OH)_m(R^4)$ , and combinations of two or more thereof;

each  $Ar^1$  is independently selected from the group consisting of phenylene group, biphenylene group, naphthylene group, binaphthylene group, and combinations of two or more thereof;

each  $Ar^2$  is independently selected from the group consisting of phenylene group, naphthylene group, and combinations thereof;

each  $A^1$  is independently a  $C_1$  to  $C_{12}$  alkylene group;

each  $A^2$  is independently selected from the group consisting of  $-C(R^1)(R^1)-$ ,  $-O-$ ,  $-N(R^1)-$ ,  $-S-$ ,  $-S(O)_2-$ ,  $-S(O)-$ , and combinations of two or more thereof;

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each  $R^1$  is independently selected from the group consisting of hydrogen,  $C_1$  to  $C_{12}$  alkyl or cycloalkyl group,  $C_6$  to  $C_{20}$  aryl group, and combinations of two or more thereof;

each  $R^4$  is independently selected from the group consisting of hydrogen,  $C_1$  to  $C_{12}$  alkyl or cycloalkyl group, acetal, ketal,  $-OR^3$ ,  $-CO_2R^3$ ,  $C_6$  to  $C_{20}$  aryl group,  $-SiR^3$ ,  $-NO_2$ ,  $-SO_3R^3$ ,  $-S(O)R^3$ ,  $-S(O)_2R^3$ ,  $-CHO$ ,  $-C(O)R^3$ ,  $F$ ,  $Cl$ ,  $-CN$ , perhaloalkyl,  $-C(O)N(R^3)(R^3)$ ,  $-A^1Z$ , and combinations of two or more thereof;

$Z$  is selected from the group consisting of  $-CO_2R^3$ ,  $-CHO$ ,  $-C(O)R^3$ ,  $-C(O)SR^3$ ,  $-SR^3$ ,  $-C(O)NR^1R^1$ ,  $-OC(O)R^3$ ,  $-OC(O)OR^3$ ,  $-N=C(R^1)R^1$ ,  $-C(R^1)=NR^1$ ,  $-C(R^1)=N-O-R^1$ ,  $-P(O)(OR^3)(OR^3)$ ,  $-S(O)_2R^3$ ,  $-S(O)R^3$ ,  $-C(O)OC(O)R^3$ ,  $-NR^3CO_2R^3$ ,  $-NR^3C(O)N(R^1)R^1$ ,  $F$ ,  $Cl$ ,  $-NO_2$ ,  $-SO_3R^3$ ,  $-CN$ , and combinations of two or more thereof;

each  $R^3$  is independently selected from the group consisting of  $C_1$  to  $C_{12}$  alkyl or cycloalkyl group,  $C_1$  to  $C_{20}$  aryl group, and combinations thereof;

each  $m$  is independently a number in the range of from 1 to 2; and  
each  $p$  is independently a number in the range of from 1 to 10.

14. (previously presented) A composition according to Claim 13 wherein

said polyhydric alcohol is selected from the group consisting of  $(OH)_m (R^4)Ar^1-Ar^1(R^4)(OH)_m$  and  $(OH)_m (R^4)Ar^1-A^1-Ar^1(R^4)(OH)_m$ ;

$Ar^1$  and  $A^1$  are the same as recited in Claim 13; and

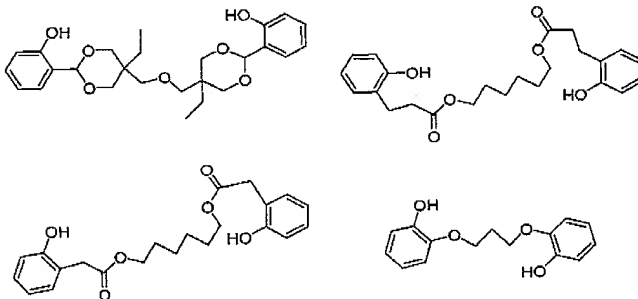
each  $R^4$  is independently selected from the group consisting of  $C_1$  to  $C_{12}$  alkyl or cycloalkyl group, acetal, ketal,  $-OR^3$ ,  $-CO_2R^3$ ,  $C_6$  to  $C_{20}$  aryl group,  $-SiR^3$ ,  $-SO_3R^3$ ,  $-S(O)R^3$ ,  $-S(O)_2R^3$ , perhaloalkyl,  $-C(O)N(R^3)(R^3)$ ,  $-A^1CO_2R^3$ ,  $-A^1OR^3$  and combinations of two or more thereof.

15. (canceled).

16. (previously presented) A composition according to Claim 11 said polyhydric alcohol is selected from the group consisting of 6,6'-dihydroxy-4,4',7,7'-hexamethyl bis-2,2'-spirochroman, 2,2'-diallylbisphenol A, bisphenol A, 4,4'-(1-methylethylidene)bis(2-(1-methylpropyl)phenol), 4,4'-thiophenol, 4,4'-dihydroxydiphenylsulfone, 4,4'-

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sulfonylbis(2-methylphenol), bis(4-hydroxy-3-methylphenyl)sulfide, 2,2'-dis(4-hydroxy-3-methylphenyl)propane, 4,4'-ethylidenebis(2,5-dimethylphenol), 4,4'-propylidenebis(2,5-dimethylphenol), 4,4'-benzylidenebis(2,5-dimethylphenol), 4,4'-ethylidenebis(2-isopropyl-5-methylphenol),



and combinations of two or more thereof.

17. (canceled).

18. (previously presented) A composition according to Claim 11 further comprising at least one Group VIII metal selected from the group consisting of nickel, palladium, cobalt, and combinations of two or more thereof.

19. (original) A composition according to Claim 18 further comprising at least one Lewis acid which is an inorganic compound or organometallic compound in which the element of said inorganic compound or organometallic compound is selected from the group consisting of scandium, titanium, vanadium, chromium, manganese, iron, cobalt, copper, zinc, boron, aluminum, yttrium, zirconium, niobium, molybdenum, cadmium, rhenium, tin, and combinations of two or more thereof.

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20. (original) A composition according to Claim 19 wherein said Lewis acid is selected from the group consisting of  $\text{ZnBr}_2$ ,  $\text{ZnI}_2$ ,  $\text{ZnCl}_2$ ,  $\text{ZnSO}_4$ ,  $\text{CuCl}_2$ ,  $\text{CuCl}$ ,  $\text{Cu}(\text{O}_3\text{SCF}_3)_2$ ,  $\text{CoCl}_2$ ,  $\text{CoI}_2$ ,  $\text{FeI}_2$ ,  $\text{FeCl}_3$ ,  $\text{FeCl}_2(\text{tetrahydrofuran})_2$ ,  $\text{FeCl}_2$ ,  $\text{TiCl}_4(\text{tetrahydrofuran})_2$ ,  $\text{TiCl}_4$ ,  $\text{TiCl}_3$ ,  $\text{ClTi}(\text{OiPr})_3$ ,  $\text{MnCl}_2$ ,  $\text{ScCl}_3$ ,  $\text{AlCl}_3$ ,  $(\text{C}_8\text{H}_{17})\text{AlCl}_2$ ,  $(\text{C}_8\text{H}_{17})_2\text{AlCl}$ ,  $(\text{iso-C}_4\text{H}_9)_2\text{AlCl}$ ,  $(\text{phenyl})_2\text{AlCl}$ ,  $\text{phenylAlCl}_2$ ,  $\text{ReCl}_5$ ,  $\text{ZrCl}_4$ ,  $\text{NbCl}_5$ ,  $\text{VCl}_3$ ,  $\text{CrCl}_2$ ,  $\text{MoCl}_5$ ,  $\text{YCl}_3$ ,  $\text{CdCl}_2$ ,  $\text{LaCl}_3$ ,  $\text{Er}(\text{O}_3\text{SCF}_3)_3$ ,  $\text{Yb}(\text{O}_2\text{CCF}_3)_3$ ,  $\text{SmCl}_3$ ,  $\text{TaCl}_5$ ,  $\text{CdCl}_2$ ,  $\text{B}(\text{C}_6\text{H}_5)_3$ , and  $(\text{C}_6\text{H}_5)_3\text{SnX}$ , and combinations of two or more thereof; and X is selected from the group consisting of  $\text{CF}_3\text{SO}_3$ ,  $\text{CH}_3\text{C}_6\text{H}_5\text{SO}_3$ ,  $(\text{C}_6\text{H}_5)_3\text{BCN}$ , and combinations of two or more thereof.

21. (original) A composition according to Claim 20 wherein said Lewis acid is selected from the group consisting of zinc chloride, cadmium chloride, iron chloride, triphenylboron,  $(\text{C}_6\text{H}_5)_3\text{SnX}$ , and combinations of two or more thereof; and X is selected from the group consisting of  $\text{CF}_3\text{SO}_3$ ,  $\text{CH}_3\text{C}_6\text{H}_5\text{SO}_3$ ,  $(\text{C}_6\text{H}_5)_3\text{BCN}$ , and combinations of two or more thereof.

22-33. (canceled)

34. (original) A process comprising (a) contacting  $\text{PCl}_3$  with a polyhydric alcohol to produce a phosphorus-containing polymer and (b) contacting said phosphorus-containing polymer with an aromatic diol.

35-62. (canceled)